oMG 2000 Series Antenna Connections

oMG

SIERRA WIRELESS®

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Document History

Version	Date	Updates
1.1	October 27 2014	Updated to SWI Template

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1. Introduction

The oMGs use three types of connectors for antennas:

- **SMA** (female): used for GPS. Labeled on the antenna and on the oMG as shown in Figure 1 below.
- **RP-SMA** (female, reverse polarity): used for cellular and WiFi connections.
- **TNC** (female): used for cellular and WiFi connections.

Figure 1 - oMG Rear Panel

Using a cellular card that plugs into the USB/ExpressCard Pocket of the oMG or into the internal ExpressCard slot may utilize the TNC antenna connections WAN1 and/or WAN2 (shown in Figure 1 above), depending on the internal antenna adapter(s) in use.

Some versions of the oMG may provide both RP-SMA and TNC connections while others only provide RP SMA connections. In Figure 2 below, all the connections are RP-SMA, with the exception of the GPS connector:

Figure 2 - An oMG Rear Panel with all RP-SMA Connections

To use antennas featuring RP-SMA connectors with an oMG that provides TNC connections for WAN1 WAN2 will require TNC male-to-RP-SMA female adapters (part number MIS080) as shown in Figure 3:

Figure 3 - TNC Male-to-RP-SMA Female adapters

To use antennas featuring TNC connectors for an internal PEM card (e.g. E362, E371, WiMax or MC7700) installed in the oMG, RP-SMA male to TNC female adapters (part number MIS055) will be required as shown in Figure 4:

Figure 4 - RP-SMA Male to TNC Female adapters

The antennas use the following networks:

Frequency	Usable Networks
694 to 960 and 1710 to 2170 MHz	3G/LTE
2.4 to 2.5 and 4.9 to 6 GHz	Wi-Fi 2.4-5 GHz/Public Safety/WiMax
GPS	GPS

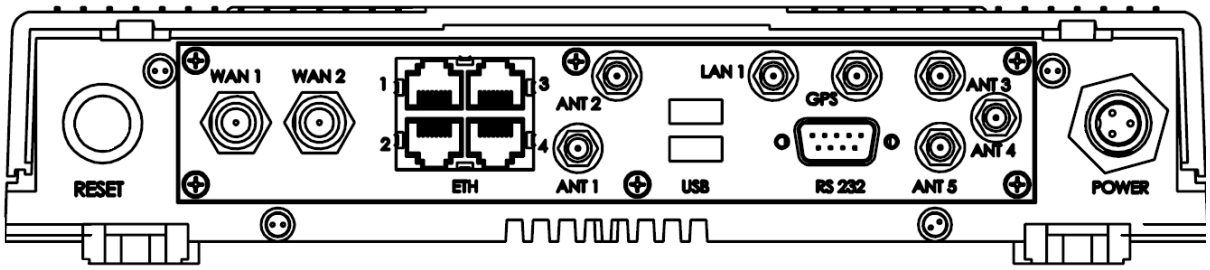
2. Backplane Layouts

There are several variants of the oMG backplanes that accommodate different configurations of the oMGs. These are classified by C numbers which define each layout. Below are examples of most of the common layouts.

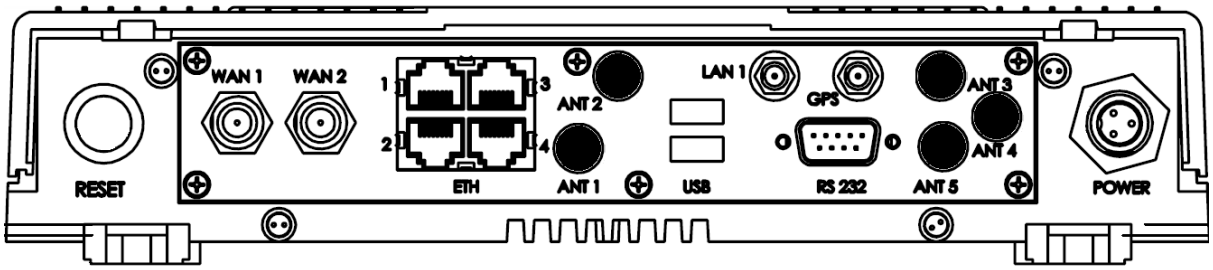
2.1. oMG 2030/2040

The oMG2030/2040 series has the following options for backplane layouts. Contact Support for assistance in identifying your specific configuration.

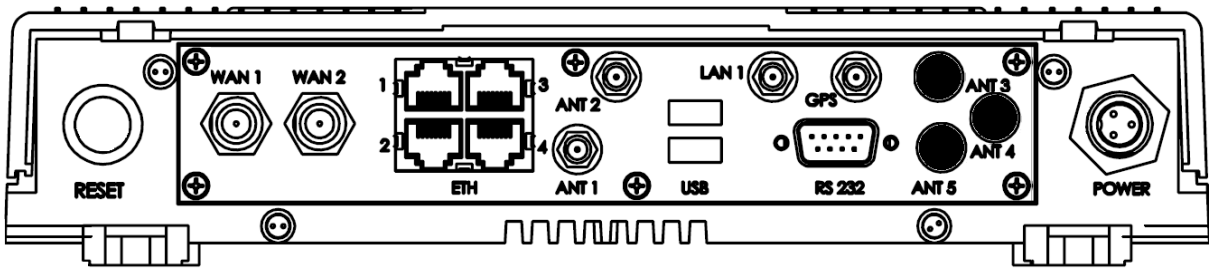
C18



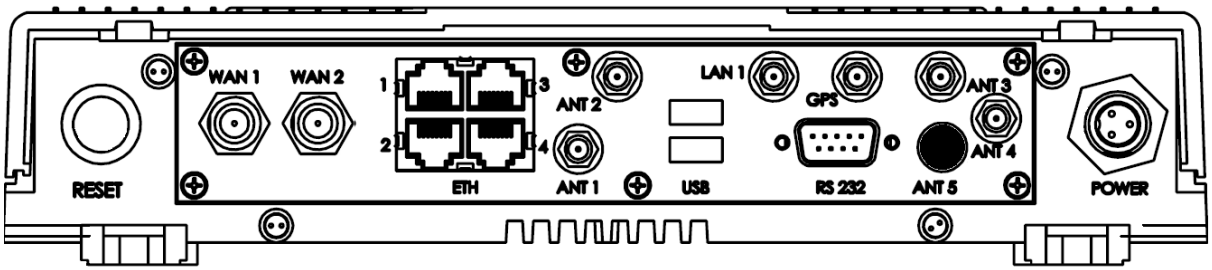
C1-C1.1



C4-C4.1



C5-C6, C14-C-14.1, C19-C19.1, C21-C23.1



Note: if two or more wireless connections are being used at the same time, the antennas need to be installed at least 20 cm apart to comply with FCC regulations.

Antennas should be labeled with the connection type when they are shipped. If for some reason they are not, use Table 1 to determine which antenna connection to use:

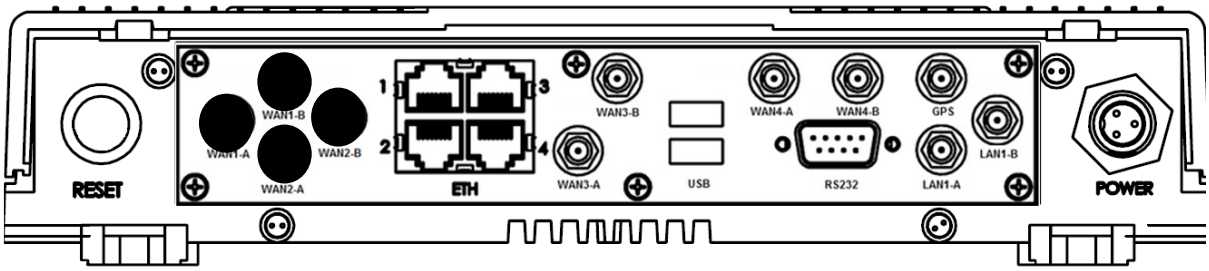
Table 1 - Antenna Labels and Connection Types for oMG 2030/2040

oMG Connection (Label)	Function	Type	Antenna Connection
LAN1	WiFi LAN (Primary)	RP-SMA	WiFi - 2.4 to 2.5 and 4.9 to 6 GHz
GPS	GPS	SMA	GPS
ANT1	WiFi or WiMAX WAN (Primary)	RP-SMA	WiFi - 2.4 to 2.5 and 4.9 to 6 GHz
ANT2	WiFi or WiMAX WAN (Secondary)	RP-SMA	WiFi - 2.4 to 2.5 and 4.9 to 6 GHz
ANT3	Cellular WAN (Primary)	RP-SMA	LTE - 694 to 960 and 1710 to 2170 MHz
ANT4	Cellular WAN (Secondary)	RP-SMA	LTE - 694 to 960 and 1710 to 2170 MHz
ANT5	Internal Express Cellular	RP-SMA	LTE - 694 to 960 and 1710 to 2170 MHz
WAN1	USB/Express Pocket Cellular	TNC	LTE - 694 to 960 and 1710 to 2170 MHz
WAN2	USB/Express Pocket Cellular	TNC	LTE - 694 to 960 and 1710 to 2170 MHz

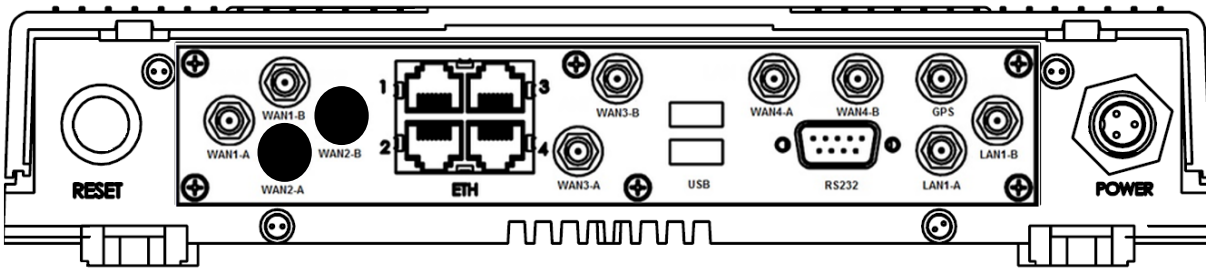
2.2. oMG 2031/2041

The oMG2030/2040 series has the following options for back panel layouts. Contact Support for assistance in identifying your specific configuration.

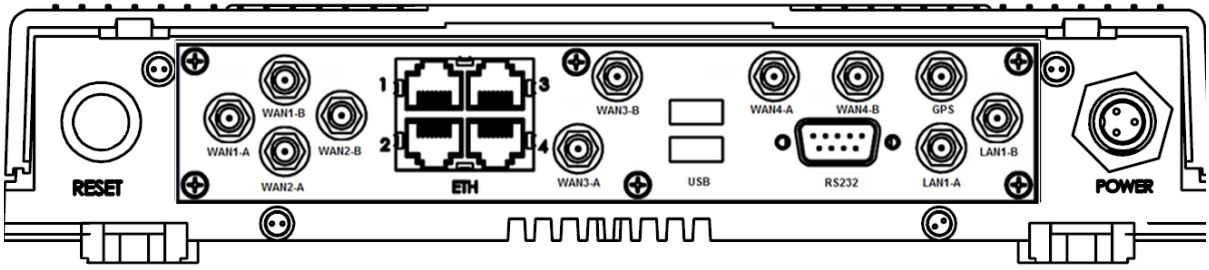
C30



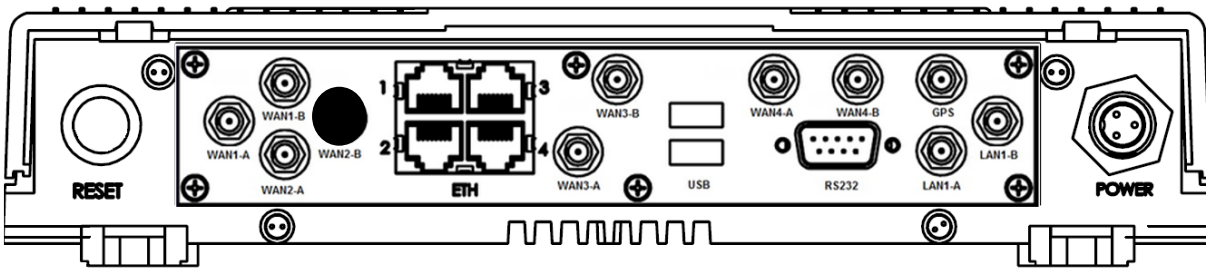
C31, C32, C34, C35 & C36



C33 & C37



C38



Note: *if two or more wireless connections are being used at the same time, the antennas need to be installed at least 20 cm apart to comply with FCC regulations.*

Antennas should be labeled with the connection type when they are shipped. If for some reason they are not, use Table 2 to determine which antenna connection to use:

Table 2 - Antenna Labels and Connection Types for oMG 2031/2041

oMG Connection (Label)	Function	Type	Antenna Connection
LAN1-A	WiFi LAN (Primary)	RP-SMA	WiFi - 2.4 to 2.5 and 4.9 to 6 GHz
LAN1-B	WiFi LAN (Secondary)	RP-SMA	WiFi - 2.4 to 2.5 and 4.9 to 6 GHz
GPS	GPS	SMA	GPS
WAN1-A	Cellular WAN (Primary)	RP-SMA	LTE - 694 to 960 and 1710 to 2170 MHz
WAN1-B	Cellular WAN (Secondary)	RP-SMA	LTE - 694 to 960 and 1710 to 2170 MHz
WAN2-A	Cellular WAN (Primary)	RP-SMA	LTE - 694 to 960 and 1710 to 2170 MHz
WAN2-B	Cellular WAN (Secondary)	RP-SMA	LTE - 694 to 960 and 1710 to 2170 MHz
WAN3-A	WiFi WAN (Primary)	RP-SMA	WiFi - 2.4 to 2.5 and 4.9 to 6 GHz
WAN3-B	WiFi WAN (Secondary)	RP-SMA	WiFi - 2.4 to 2.5 and 4.9 to 6 GHz
WAN4-A	USB/Express Pocket Cellular	RP-SMA	LTE - 694 to 960 and 1710 to 2170 MHz
WAN4-B	USB/Express Pocket Cellular	RP-SMA	LTE - 694 to 960 and 1710 to 2170 MHz